

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/054136 A1

(51) International Patent Classification⁷: **C01G 23/07**,
B01J 21/06, 37/10, 35/10, 35/00, C08K 3/22, C09K 3/14

(21) International Application Number:
PCT/EP2004/013317

(22) International Filing Date:
24 November 2004 (24.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
103 57 508.1 3 December 2003 (03.12.2003) DE
10 2004 055 165.0
16 November 2004 (16.11.2004) DE

(71) Applicant (for all designated States except US): **DE-
GUSSA AG** [DE/DE]; Bennigsenplatz 1, 40474 Düsseldorf (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCHUMACHER**,

Kai [DE/DE]; Berliner Strasse 16, 65719 Hofheim (DE). **SCHILD, Andreas** [DE/DE]; Lindweg 43, 79639 Grenzach-Wyhlen (DE). **MÖRTERS, Martin** [DE/DE]; Dinkelbergstrasse 6, 79618 Rheinfelden (B) (DE).

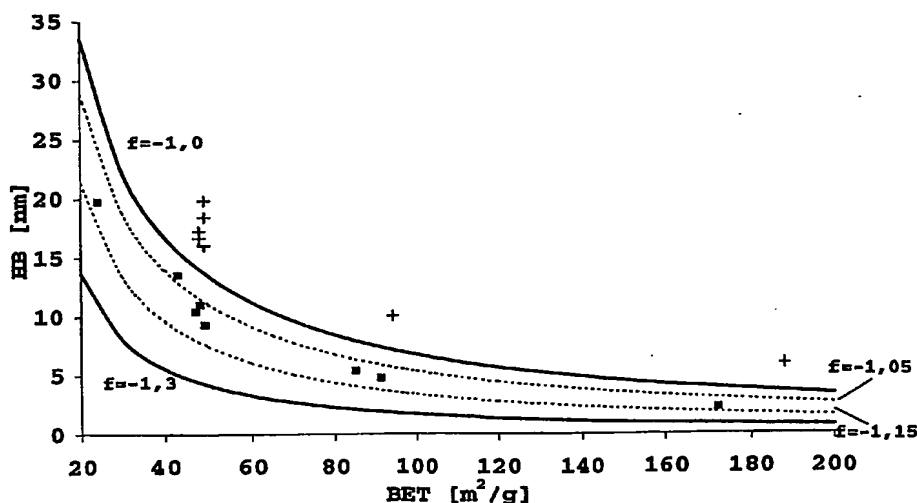
(74) Common Representative: **DEGUSSA AG**; Intellectual Property Management, Patente und Marken, Standort Hanau, Postfach 13 45, 63403 Hanau (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: **FLAME-HYDROLYTICALLY PRODUCED TITANIUM DIOXIDE POWDER**



(57) Abstract: Flame-hydrolytically produced titanium dioxide powder that is present in the form of aggregates of primary particles, and has a BET surface of 20 to 200 m²/g, a half width (HW) [nm] of the primary particle distribution of HW \leq 35; a x BETf where a \leq 670x10⁻⁹ m³/g and -1.3 \leq f \leq -1.0 and the proportion of particles with a diameter of more than 45 μ m lies in a range from 0.0001 to 0.05 wt.%. The powder is produced by a process in which a titanium halide is vapourised at temperatures of less than 200°C, the vapours are transferred to a mixing chamber by means of a carrier gas of defined moisture content and, separately from this, hydrogen, primary air, which may optionally be enriched with oxygen and/or preheated, and steam are added to the mixing chamber, following which the reaction mixture is combusted in a reaction chamber sealed from the ambient air, secondary air is in addition introduced into the reaction chamber, the solid is then separated from gaseous substances, and following this the solid is treated with steam. The titanium dioxide powder may be used for the heat stabilisation of polymers.



FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*